

### AMENDMENTS TO THE CLAIMS

1.-30. (Canceled)

31. (Currently Amended) In a signal processor for processing at least two measured signals M<sub>1</sub> and M<sub>2</sub>, where said signal M<sub>1</sub> comprises a physiological signal portion S<sub>1</sub> and may comprise a noise portion N<sub>1</sub>, and where said signal M<sub>2</sub> comprises a physiological signal portion S<sub>2</sub> and may comprise a noise portion N<sub>2</sub>, a method comprising:

determining a value for a coefficient c used in a combination of M<sub>1</sub> and M<sub>2</sub> such that the combination of M<sub>1</sub> and M<sub>2</sub> approximates S<sub>1</sub>, wherein determining the coefficient c comprises comparing frequency domain representations of the two measured signals M<sub>1</sub> and M<sub>2</sub>;

using said coefficient c to remove at least some of the noise portion N<sub>1</sub> from the measured signal M<sub>1</sub>, thereby producing an approximation A<sub>1</sub> to said physiological signal S<sub>1</sub>; and

determining a measured output value for one or more physiological parameters based at least in part on said approximation A<sub>1</sub>.

32. (Previously Presented) The method of Claim 31, where A<sub>1</sub>, M<sub>1</sub> and M<sub>2</sub> comprise frequency domain signals.

33. (Previously Presented) The method of Claim 31, further comprising displaying A<sub>1</sub> on a display.

34. (Canceled)

35. (Currently Amended) The method of Claim [[34]] 31, wherein said physiological parameter comprises arterial oxygen saturation.

36. (Canceled)

37. (Previously Presented) The method of Claim 32, wherein S<sub>1</sub> is indicative of a heart plethysmograph, further comprising calculating a pulse rate of the heart.

38. (Previously Presented) The method of Claim 31, further comprising determining, based upon the comparison of M<sub>1</sub> and M<sub>2</sub>, whether M<sub>1</sub> comprises N<sub>1</sub>.

39. (Currently Amended) The method of Claim 38, further comprising wherein said value for the coefficient c is selected to reduce its effect disabling said usage of e to remove at least some of the noise portion N<sub>1</sub> if M<sub>1</sub> does not comprise N<sub>1</sub>.

40. (Previously Presented) The method of Claim 31, wherein the combination of M<sub>1</sub> and M<sub>2</sub> comprises a linear combination of M<sub>1</sub> and M<sub>2</sub>.

41. (Previously Presented) The method of Claim 40, wherein the linear combination of M<sub>1</sub> and M<sub>2</sub> comprises cM<sub>1</sub> - M<sub>2</sub> such that A<sub>1</sub> = cM<sub>1</sub> - M<sub>2</sub>.

42. (Previously Presented) The method of Claim 41, wherein an error value, e, given by the relation e = S<sub>1</sub> - (cM<sub>1</sub> - M<sub>2</sub>) is reduced.

43. (Previously Presented) The method of Claim 31, wherein comparing the two measured signals M<sub>1</sub> and M<sub>2</sub> comprises calculating ratios of values of a frequency domain representation of M<sub>1</sub> to corresponding values of a frequency domain representation of M<sub>2</sub>.

44. (Previously Presented) The method of Claim 43, wherein said ratios are calculated using values that correspond to peaks in said frequency domain representations of M<sub>1</sub> and M<sub>2</sub>.

45. (Currently Amended) The method of Claim 43, wherein determining whether M<sub>1</sub> comprises N<sub>1</sub> comprises further comprising determining whether the ratios have a predetermined degree of similarity.

46. (Currently Amended) The method of Claim 31, comprising displaying the measured output value value on a display.